

[REGENERATIVE BRAKING SYSTEM FOR A HYBRID ELECTRIC VEHICLE]

Abstract of Disclosure

A regenerative braking system for use with a hybrid electric vehicle 10 including an internal combustion engine 14, an electric motor/generator or transaxle assembly 16, and a transmission assembly 18 which selectively receives torque from the engine 14 and transaxle 16 and delivers the received torque to vehicle's wheels 26, 28. The engine 14 is connected to the transmission assembly 16 by use of a clutch 20. During regenerative braking events, the system automatically disengages clutch 20, thereby allowing a maximum amount of energy to be recovered by the transaxle assembly 16, as engine "drag" is eliminated. Furthermore, the system disengages clutch 20 during idling conditions, and utilizes transaxle 16 to provide a negative torque to the driveline, effective to recover energy and to simulate engine drag forces due to compression braking effects, thereby providing a driver of the vehicle 10 with consistent feel during all operating modes.